# L-DOPA-$^{13}$C

**Cat. No.:** HY-N0304S2

**CAS No.:** 586971-29-1

**Molecular Formula:** $C_8{}^{13}CH_{11}NO_4$

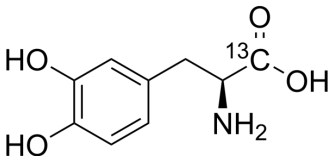
**Molecular Weight:** 198.18

**Target:** Dopamine Receptor; Endogenous Metabolite

**Pathway:** GPCR/G Protein; Neuronal Signaling; Metabolic Enzyme/Protease

**Storage:** 4°C, stored under nitrogen

* In solvent : -80°C, 6 months; -20°C, 1 month (stored under nitrogen)




## SOLVENT & SOLUBILITY

**In Vitro**

0.1 M HCL : 20 mg/mL (100.92 mM; ultrasonic and warming and adjust pH to pH to 2 with HCl)

| Preparing Stock Solutions | Solvent / Mass / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|---|
| | 1 mM | 5.0459 mL | 25.2296 mL | 50.4592 mL |
| | 5 mM | 1.0092 mL | 5.0459 mL | 10.0918 mL |
| | 10 mM | 0.5046 mL | 2.5230 mL | 5.0459 mL |

Please refer to the solubility information to select the appropriate solvent.

## BIOLOGICAL ACTIVITY

**Description**

L-DOPA-$^{13}$C is the $^{13}$C labeled L-DOPA[1]. L-DOPA (Levodopa) is an orally active metabolic precursor of neurotransmitters dopamine. L-DOPA can cross the blood-brain barrier and is converted into dopamine in the brain. L-DOPA has anti-allodynic effects and the potential for Parkinson's disease[2][3][4].

**In Vitro**

Stable heavy isotopes of hydrogen, carbon, and other elements have been incorporated into drug molecules, largely as tracers for quantitation during the drug development process. Deuteration has gained attention because of its potential to affect the pharmacokinetic and metabolic profiles of drugs[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## CUSTOMER VALIDATION

- Cell Rep Med. 2023 May 24;101061.

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## REFERENCES


[1]. Russak EM, et al. Impact of Deuterium Substitution on the Pharmacokinetics of Pharmaceuticals. Ann Pharmacother. 2019 Feb;53(2):211-216.

[2]. Hyland K, et al. Aromatic L-amino acid decarboxylase deficiency: diagnostic methodology. Clin Chem. 1992 Dec;38(12):2405-10.

[3]. Merims D, et al. Dopamine dysregulation syndrome, addiction and behavioral changes in Parkinson's disease. Parkinsonism Relat Disord. 200814(4):273-80. Epub 2007 Nov 7.

[4]. Perez-Pardo P, et al. Additive Effects of Levodopa and a Neurorestorative Diet in a Mouse Model of Parkinson's Disease. Front Aging Neurosci. 2018 Aug 310:237.

[5]. Park HJ, et al. Anti-allodynic effects of levodopa in neuropathic rats. Yonsei Med J. 2013 Mar 154(2):330-5.





Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA